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data sheet

## nanoLC-1D™ plus system

***The NanoLC that delivers the highest peptide detection sensitivity now features a dedicated rapid sample loading pump***

The NanoLC-1D Plus system for proteomics includes all of the capabilities and benefits of the NanoLC-1D system–direct pumping for precise nanoscale gradients, and automated peak parking–with the added capability of a dedicated sample loading pump that can load large samples as rapidly as 30 µL/min. The NanoLC-1D Plus system is based on Eksigent's microfluidic flow control (MFC) technology, which uses continuous feedback to an electronically controlled pressure source to maintain precise nanoscale flow rates as low as 20 nL/min without flow splitting. Additionally, the system includes Eksigent's Dynamic Flow Control capability, which allows the flow rate to be changed rapidly for higher speed sample loading or for extended MS/MS analysis (peak parking) to identify co-eluting and low abundance peptides.

### full integration and flexibility

The NanoLC-1D Plus system includes nanoscale binary gradient pumps, a dedicated sample loading pump, autosampler, and two injection valves. The 10-port injection valve accommodates 2 trap columns. The Eksigent Control Software provides complete control of the pumps, valves, and autosampler and provides flexible sample injection modes. The software is fully integrated in Thermo's Xcalibur® and ABI/MDS Sciex's Analyst® 1.4.1 software.

### simple operation

The NanoLC-1D Plus system's intuitive control software simplifies setting up a rapid sample load followed by a nanoscale gradient. In addition to minimized mobile phase preparation and waste generation, direct pumping allows experimental conditions (e.g. column dimensions) to be changed easily without the need to reconfigure flow splitting hardware.

## nanoLC-1D plus system

- High throughput–Rapid sample loading pump injects samples at up to 30 µL/min onto trap or analytical columns, quickly loading large samples
- Precision–Direct pumping without flow splitting provides increased flow precision, resulting in improved protein identification
- Increased sensitivity–The NanoLC-1D Plus system incorporates Eksigent's unique Dynamic Flow Control capability, enabling peak parking, which improves the ability to identify low-abundance peptides
- Simple operation–the intuitive Eksigent Control Software includes full integration in Xcalibur and Analyst 1.4.1. Elimination of flow splitters eliminates time-consuming hardware reconfiguration


nanoLC·1D™ PLUS

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# nanoLC-1D plus system specifications

**configuration**
Binary gradient pump, dedicated sample loading pump, 6-port low volume injection valve standard, 10-port optional.
**gradient flow rate range**
20 nL/min to 1000 nL/min (Other ranges available with flow module swap)
**flow rate precision**
Less than 0.5% RSD at 500 nL/min
**sample loading pump**
1 µL/min to 30 µL/min
**pump type**
Microfluidic flow control (MFC) direct pumping system with independent flow rate feedback for each mobile phase. Tunable PID flow rate control.
**gradient formation**
High-pressure gradient mixing, no flow splitting
**delay volume**
65 nL from mixer to external injection valve connected with 15 cm of 25 µm id capillary.
**delay time**
<25 sec at 500 n/min using 5 cm column and low port-to-port volume injection valve.
**mobile phase compatibility**
All mobile phases that are compatible with 316 stainless steel, PEEK, and silica.
**injections**
Standard and timed injections. Sample injection volume 200 nL to 50 µL
**columns**
System optimized for use with 50 to 150 µm id columns
**peak parking**
Peak parking flow rate user settable to as low as 5 nL/min. Triggered by user or through mass spectrometer.
**peak parking response**
Response time from 500 nL/min to 100 nL/min: <4 seconds at spray tip, using 150 µm id, 6 cm long, 5 µm C18 column
**autosampler**
One 96- or 384-well plate capacity, Peltier type temperature maintained sample compartment, 5 °C to 40 °C. Dual needle design for seal piercing. Integral 6-port injection valve. Numerous injection options.
**system control**
Computer with graphical user interface for control of all system parameters. Software creates data files for export and analysis. Drivers included for Xcalibur and Analyst 1.4.1
**system size**
14" (35 cm) wide x 8" (20 cm) high x 15" (38 cm) deep. Autosampler adds 18" (45 cm) in height.
**utility requirements**
100-240 VAC electrical input. Dry compressed air or nitrogen, 80-100 psi (6-7 bar)
**GLP features**
Tracking of instrument runtime, column usage, total injections, solvent usage, and error codes
**diagnostics**
System includes automated diagnostic routines for controller tuning, flow rate calibration, flow rate precision determination, and detection of leaks and blocks